Work Order ID 57197

March 29, 2010 11:23:44 AM



Page 1

Item ID: **Revision ID: Item Name: Start Date: Required Date: 05/04/2010** Reference:

D212-664-201TRN

Accept



Setup Start



Crosstube Turning Detail

29/03/2010

QC:

Start Otv: 1.00

Req'd Qty: 1.00



Cust Item ID:

Customer:

Approvals:

Date: 10-3-29 Tooling:

Date:

SPC (Y/N):

Date:

Date:

Start Run

Reject

Qty



Stop

Stop

Sequence ID/ **Work Center ID**

Operation Description

Revision Nbr

Set Up/ **Run Hours** Draw Number

Draw | Plan Rev. Code

Accept Qty

Reject Number

Insp. Stamp

Draw Nbr D212-664-241

Rev D

MORI SEIKI CNC LATHE LARGE

Memo

0.00

0.00

all 10 - 0\$ -03

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA114

2-Turn first side as per Folio FA114

3- File transition lines smooth.

110

100

Mori Seiki

Quality Control

QC

QC1- Inspect dimensions to dimension sheet

0.00

0.00

120

Mori Seiki

Mori Seiki CNC Lathe Large

MORI SEIKI CNC LATHE LARGE

Memo

Memo

0.00

0.00

1-Turn second side as per Folio FA114

- 2- File transition lines smooth.
- 3-Remove sand and plugs 4- scribe batch # and part # as per dwg

a: 10 - 05 - 03

W/O:			W	ORK ORDER CHAN	GES					<u> </u>
DATE	STEP	PR	OCEDURE CHA	NGE	E	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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Part No	:	PAR #:	Fault Cate	gory:	NCR:	Yes N	o DQ /	A:	Date:	
	Re	esolution:	Dispositio	n:	QA: N	/C Clos	sed:		Date:	
NCR:			WORK ORD	ER NON-CONFORM	IANCE (NCR)				-
DATE	STEP	Description of NC Section A	Initial Chief Eng	Corrective Action Se Action Description Chief Eng		ign & Date	Verific Secti		Approval Chief Eng	Approval QC inspector
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Work Order ID 57197

March 29, 2010 11:23:44 AM



Page 2

Item ID:

D212-664-201TRN

Accept

Setup Start

Stop



Revision ID:

Start Date:

Item Name:

Crosstube Turning Detail

29/03/2010

Start Qty: 1.00

Required Date: 05/04/2010

Req'd Qty: 1.00



Cust Item ID:

Customer:

Draw

Number

Reference: Approvals:

Process Plan: _____ Date: ____

Tooling:

Date:

Draw

Rev.

Plan

Code

Start Run

Date:_____ SPC (Y/N):

Date:

Stop

Reject Insp.

Sequence ID/ Work Center ID

130

Quality Control

Operation Description

QC1- Inspect dimensions to dimension sheet

Set Up/ **Run Hours**

0.00

0.00

QA 10-05-03 0

Qty

Accept

Reject

Qty

Number Stamp

140



Quality Control

QC8- Inspect parts - second check

Memo

0.00

Memo

0.00

D MA 10-05-03

150



Hand Finishing Crosstubes

Crosstubes Chemical Conversion

0.00

Memo

0.00

Chemical Conversion Coat as per within 24 hours of machining

W/O-			1.0	001/ 00000				· · · · -		
W/O:	,		W	ORK ORDER CHANG	GES					
DATE	STEP	PRO	OCEDURE CH	ANGE		Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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		esolution:								
NCR:			WORK ORD	DER NON-CONFORM	ANCE (NCR)			
DATE	STEP	Description of NC	Corrective Action Section B			Veritic		ation Approval	Approval	
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Work Order ID 57197

March 29, 2010 11:23:44 AM

Required Date: 05/04/2010



Page 3

Item ID:

D212-664-201TRN

Accept

Setup Start

Stop



Item Name:

Revision ID:

Crosstube Turning Detail

Start Date:

29/03/2010

Start Qty: 1.00

Req'd Qty: 1.00



Cust Item ID:

Customer:

Reference: Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

QC:

Date:_____

SPC (Y/N):

Date:

Stop

Sequence ID/ Work Center ID

160



Quality Control

Operation Description

QC3- Inspect Part Finish

Memo

Set Up/ **Run Hours**

0.00

0.00

Draw

Number

Draw Rev.

Accept Qty

Reject Qty

Reject Number Insp. Stamp

170



Packaging

Packaging

Packaging

Identify and stock in kanban rack

0.00

0.00

Plan

Code

MB 10-05-03

180

Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

10/05/04 Hy BS 10-5-09,

	•								
W/O:			W	ORK ORDER CHANG	GES				
DATE	STEP	PR	OCEDURE CHA	NGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
									
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	Res	olution:	Dispositio	n:	QA: N/C (Closed:		Date: _	
NCR:		,	WORK ORD	ER NON-CONFORM	ANCE (NC	R)	•		
DATE	STEP	Description of NC			tion B	Verific	cation		Approval
		Section A	Initial Chief Eng	Action Description Chief Eng	Sign Date		Section C Ch		QC Inspector
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Work Order ID: 57197

Parent Item:

D212-664-201TRN

Parent Item Name:

Component Item ID/

Crosstube Turning Detail

Comments:

Item Name

IPP Rev:A 08-03-06 new issue DD verified by:ec IPP Rev B 08.04.02 Removed polish EC verified DD

Purch

Replacement Mfg/

Item ID

Manufactured

Bin

Primary Item Location No

Last Location

Route Seq ID 120

Unit of Measure Each

Qty on Hand 54.0000

Remaining 1.0000

Start Date: 29/03/2010

Start Qty: 1.00

Qty Qty To Pick Issued

Date Issued

Status

Required Qty: 1.00

10-05-036

Required Date: 05/04/2010

D6006-129 Crosstube Material

Warehouse	Loc Qty	Loc Code	
Location			
Main Warehouse			
LG	54		
23970	2		
26550	15		
34690	7 11		
38338	26		

										ė.
W/O:				WORK ORDER CH	ANGES	·····				,
DATE	STEP		PROCEDURE C	HANGE		Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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raitivo		PAR #: esolution:	The second secon							
NCR:			***************************************	RDER NON-CONFO						
DATE	STEP	Description of NC Section A	Initial Chief Eng	Corrective Action Action Descrip Chief Eng	Section B	Sign & Date	Verific Section		Approval Chief Eng	Approval QC Inspector
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DART AEROSPACE LTD	Work Order:	51191
Description: Crosstube Assembly (205/212 High Aft)	Part Number:	D212-664-241
Inspection Dwg: D212-664-241 Rev:		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

X First Article Prototype

	nspection Sheet awing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
	0.200	+/-0.010	0.200	1			
	R0.063	+/-0.010	RO-063	1			
ŀ	2.990	+0.005/-0.000	2.991	1			
1	5.237	+/-0.030	5 237	/			
1	2.600	+0.005/-0.000	2.604	1			
	2.686	+0.005/-0.000	2.689	/			· · · · · · · · · · · · · · · · · · ·
EA	2.770	+0.005/-0.000	2.775				
SIDE	2.854	+0.005/-0.000	2.859				
	2.938	+0.005/-0.000	2.543				
	3.021	+0.005/-0.000	3.026				
	3.133	+0.005/-0.000	3.132				
	3.179	+0.005/-0.000	3 184	7	- "		
			3.704				
ļ							
	0.200	+/-0.010	0.200	1			
	R0.063	+/-0.010	RO.063				
	2.990	+0.005/-0.000	2.990				
	5.237	+/-0.030	5 237				
	2.600	+0.005/-0.000	2.605				
	2.686	+0.005/-0.000	2.689	7			
m	2.770	+0.005/-0.000	2.775				
SIDE	2.854	+0.005/-0.000	2.859				
တ	2.938	+0.005/-0.000	2.943	7		-	
	3.021	+0.005/-0.000	3 026				
	3.133	+0.005/-0.000	3.137	7			
. [3.179	+0.005/-0.000	3.184	フー			
	124.36	+/-0.020	124 360	7			
			1.300				

Measured by:	G. 1/	Audited by:	MB	Prototype Approval:	N/A
Date:	10-05-03	Date:	10-05-03	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	05.04.27	New Issue (P/O D412-664-201)	KJ/JLM	Approved
В	06.03.09	Tolerance for 5.237 was +/-0.001	KJ/JLM	
С		Dwg Rev. updated	KJ/JLM KJ/JLM	N
			1 NO/OLIVI CAT	777

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROC	EDURE CHANGE		Ву	Date Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
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Part No:	· •	PAR #:	Fault Category:	NCI	R: Yes N	o DQA:	_ Date:	* ·
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NCR:		W	ORK ORDER NON-COM	IFORMANCE	(NCR)			
		Description of NC	Corrective Action Sect		Section B Verification			
DATE	STEP	Section A	Initial Action Des Chief Eng Chief E	scription Eng	Sign & Date	Section C	Approval Chief Eng	Approval QC inspector
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	,							

Item	Qty -241	Qty -241B	Part Number	Description
1	Х		D212-664-241	CROSSTUBE ASSEMBLY (205/212 HIGH AFT)
2		Х	D212-664-241B	CROSSTUBE ASSEMBLY (214 HIGH AFT)
3	1	1	D6006-129	CROSSTUBE
4	2	2	D2940-1	SUPPORT
5	4	4	D3595-063-530	RUBBER CUSHION
6	4	4	MS21920-28	CLAMP (OR MS21920-30)
7	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

1) MATERIAL: MANUFACTURED FROM D6006-129 FINISHED LENGTH = 124.362±0.020

FINISH: CHEMICAL CONVERSION COATPER DART QSI 005 4.1 PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2 PAINT OUTSIDE PER DART QSI 005 4.2

3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.

UNITS: INCHES UNLESS OTHERWISE NOTED. BREAK SHARP EDGES: 0.005 TO 0.010 MAX.

IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.

WEIGHT: D212-664-241 = 44.2 lbs (PER IIN-D212-664) D212-664-241B = 44.2 lbs (PER IIN-D212-664)

PART IS SYMMETRIC ABOUT CENTERLINE.

RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALY, TRANSITION SHOULD BE SMOOTH.

10) BEND PROGRESSIVELY WITH A MINIMUM OF 5 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.

11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.

12) INSTALL D2940-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2940-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.

13) INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE THE D2940-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT.

14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING

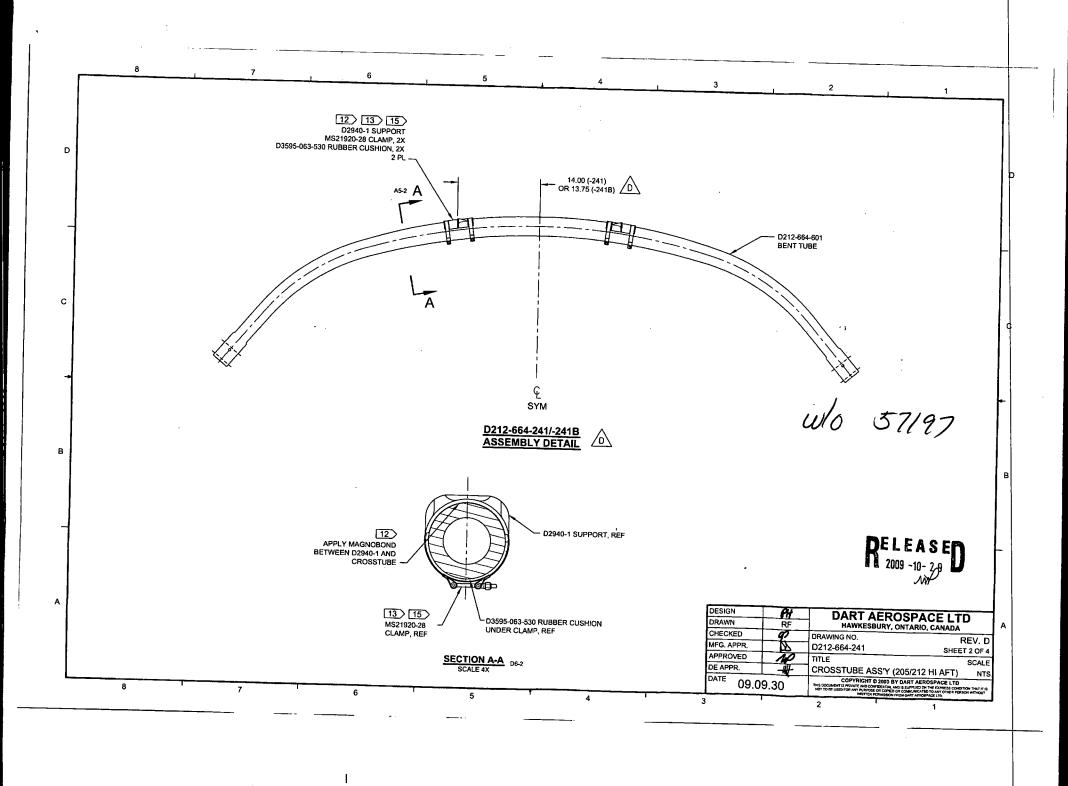
SHOP COPY RETURN TO ENGINEERING UNCONTROLLED CO. Y SUBJECT TO AMENDMENT WITHOUT NOTICE WORK_ORDER BS 10-3-29

REFORMAT/REVISE GENERAL NOTES/PART LIST: 09.09,30 REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS; ADD -241B (ZN D4-2, B4-2); REMOVED REF & ADD TOLERANCES (ZN D8-3 & C4-3, C6-3 & A8-3); RELOCATED FLAG #6 PER PAR 08-046 (ZN A5-3); MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4 REMOVE -1009 ABRASION STRIP; ADD MAGNOBOND 07.03.08 6398, CUSHION, REVERSE CLAMPS ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES 05.02.04 NEW ISSUE PH 00.12.12 REV. DESCRIPTION BY DATE DESIGN DART AEROSPACE LTD

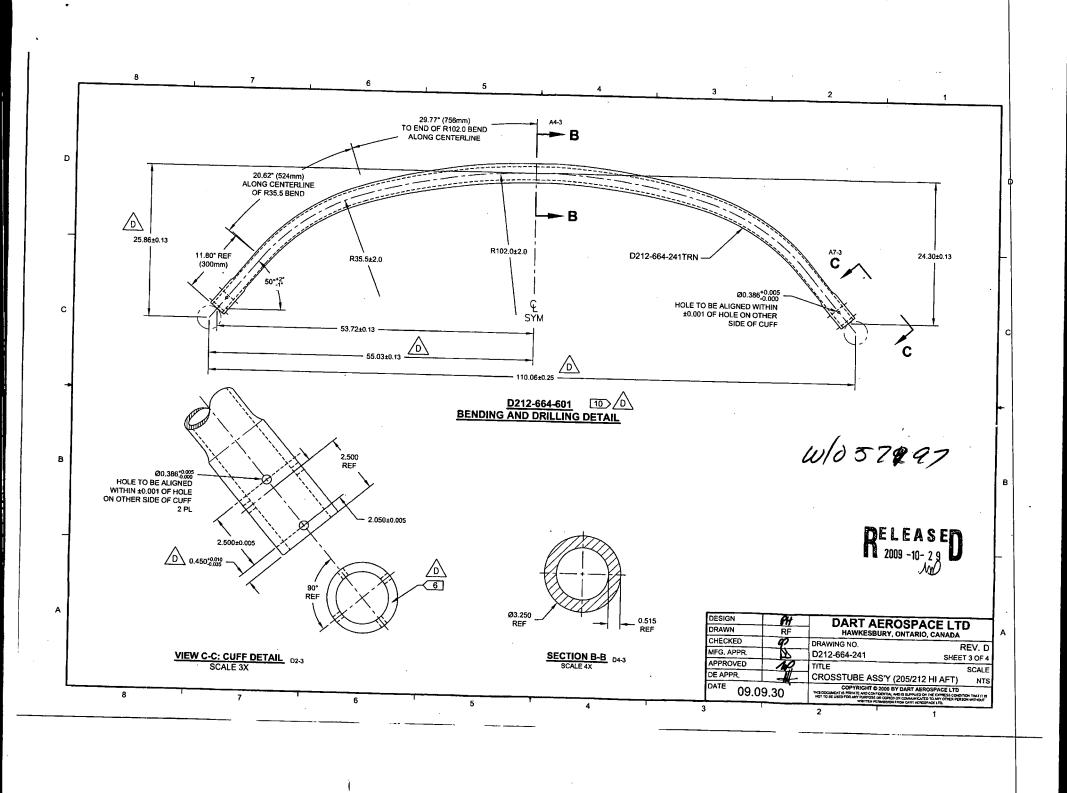
DRAWN HAWKESBURY, ONTARIO, CANADA RF CHECKED DRAWING NO. REV. D MFG. APPR. D212-664-241 SHEET 1 OF 4 APPROVED TITLE SCALE DE APPR CROSSTUBE ASS'Y (205/212 HI AFT) NTS COPYRIGHT © 2000 BY DART AEROSPACE LTD 09.09.30

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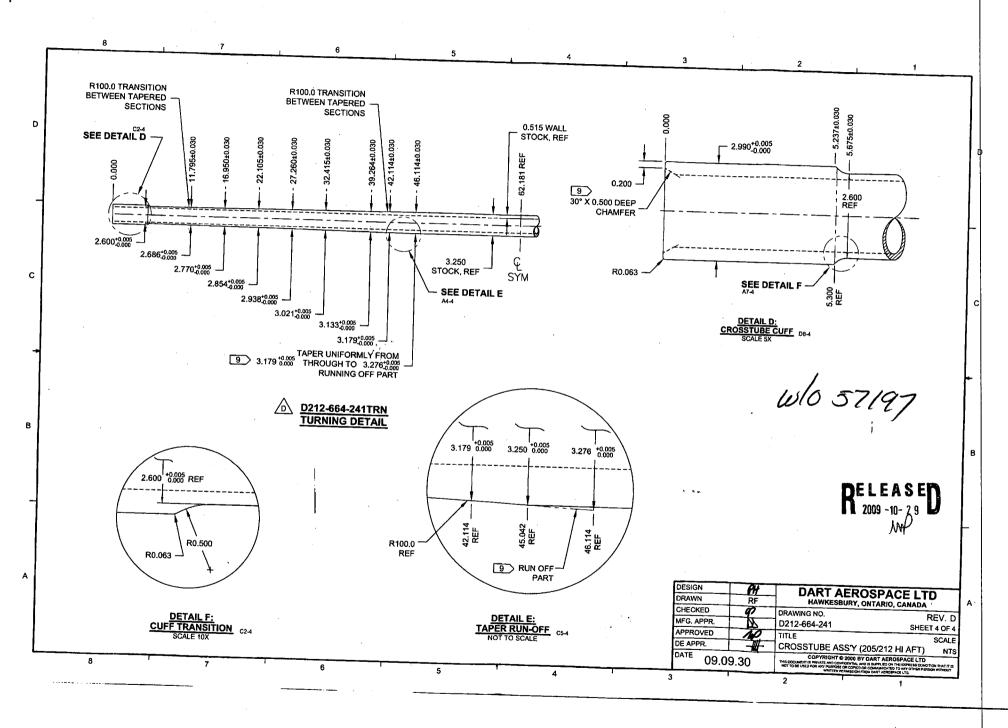
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W/O:		WORK ORDER CHANGES										
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					QA: N/C Closed: Date:							
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DATE	STEP	Description of NC		etion B	Verific	cation	Approval	Approval				
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W/O:			W	ORK ORDER CHA	NGES						
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W/O:		WORK ORDER CHANGES										
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			Disposition:									
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